



Background

Spinal metastases have been reported in up to 20% of patients with prostate carcinoma (1). Nonmalignant etiologies of the spine can also exist in this population and contribute towards chronic pain (2). In this case we discuss a post-prostate cancer patient with vertebral lesions that was managed interventionally via tumor ablation, cementoplasties, and biopsies resulting in chronic pain relief.

In this case we report an obese 52-year-old male suffering from constant 7/10 nonspecific chronic low back pain for 8 years. The patient worked in construction and had a past medical history of prostate cancer 14 years prior which was treated with radiation (undetectable PSA levels since treatment). He had tried management with over-the-counter analgesics, physical therapy, and acupuncture. He was referred to the pain clinic for further evaluation and possible treatment with spine injections. Given the patient’s history and presentation, MRI lumbosacral spine with and without contrast was ordered. The radiologist’s impression included interval development of L5 and S1 vertebral body metastatic disease without pathologic fracture deformities. Laboratory tests and tumor markers were sent and returned within normal limits. PET scan was conducted and revealed no areas of concern. The case was discussed with an oncologist and management proceeded with L5 and sacral tumor radiofrequency ablation (RFA), biopsies, and cementoplasties. These procedures were completed uneventfully under MAC. Sacral and lumbar biopsies revealed focal fibrosis with no evidence of metastatic carcinoma. One month post procedure the patient had complete return of functional activity and was pain free.

Methods/Results



Image 1: MRI LS sagittal: Interval development of L5 and S1 vertebral body metastatic disease without pathologic fracture deformity

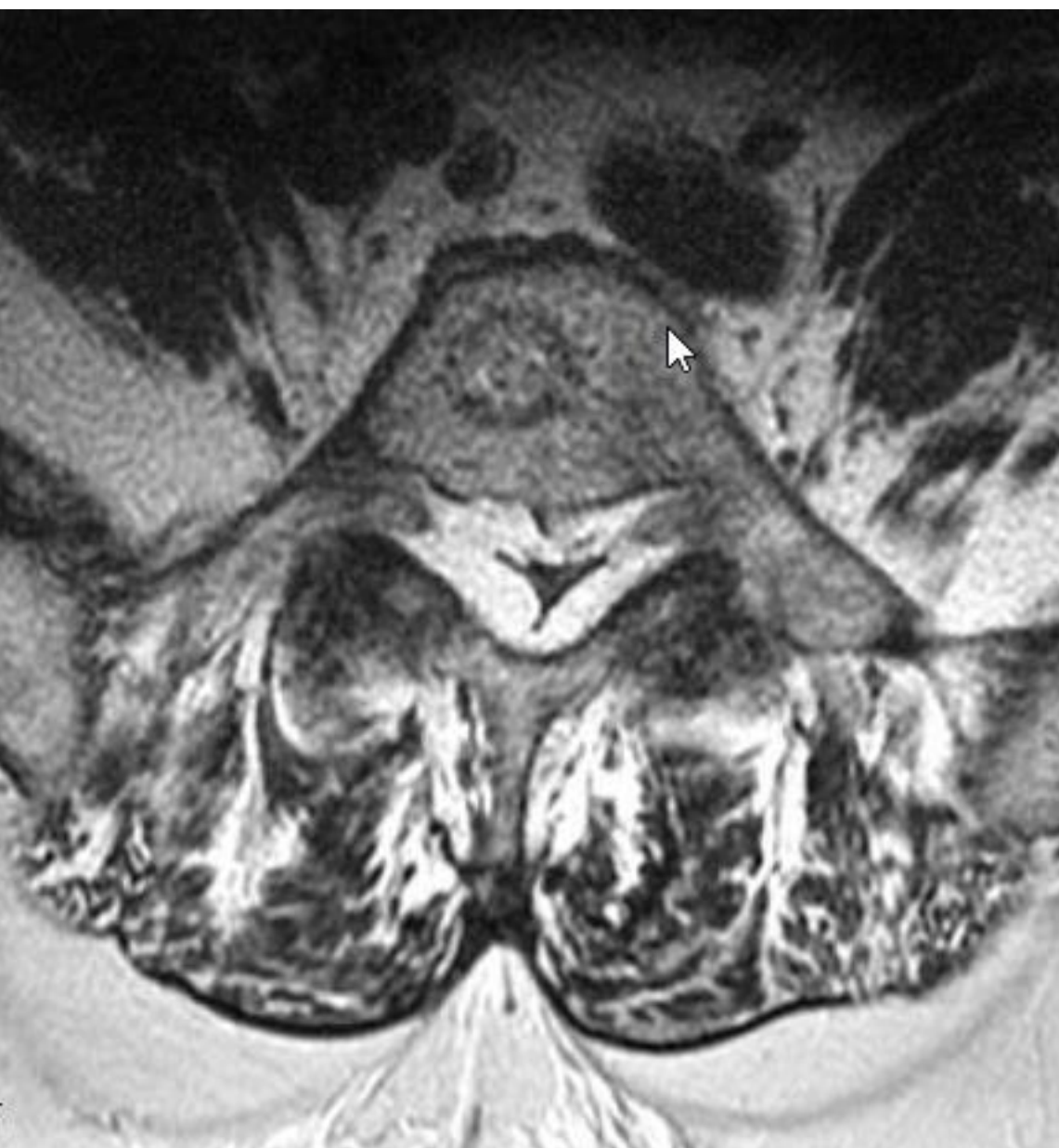


Image 2: MRI LS axial: osteoblastic metastasis at L5



Image 3: Needle placement into vertebral body during cementoplasty



Image 4: Lateral fluoroscopic image during cement injection

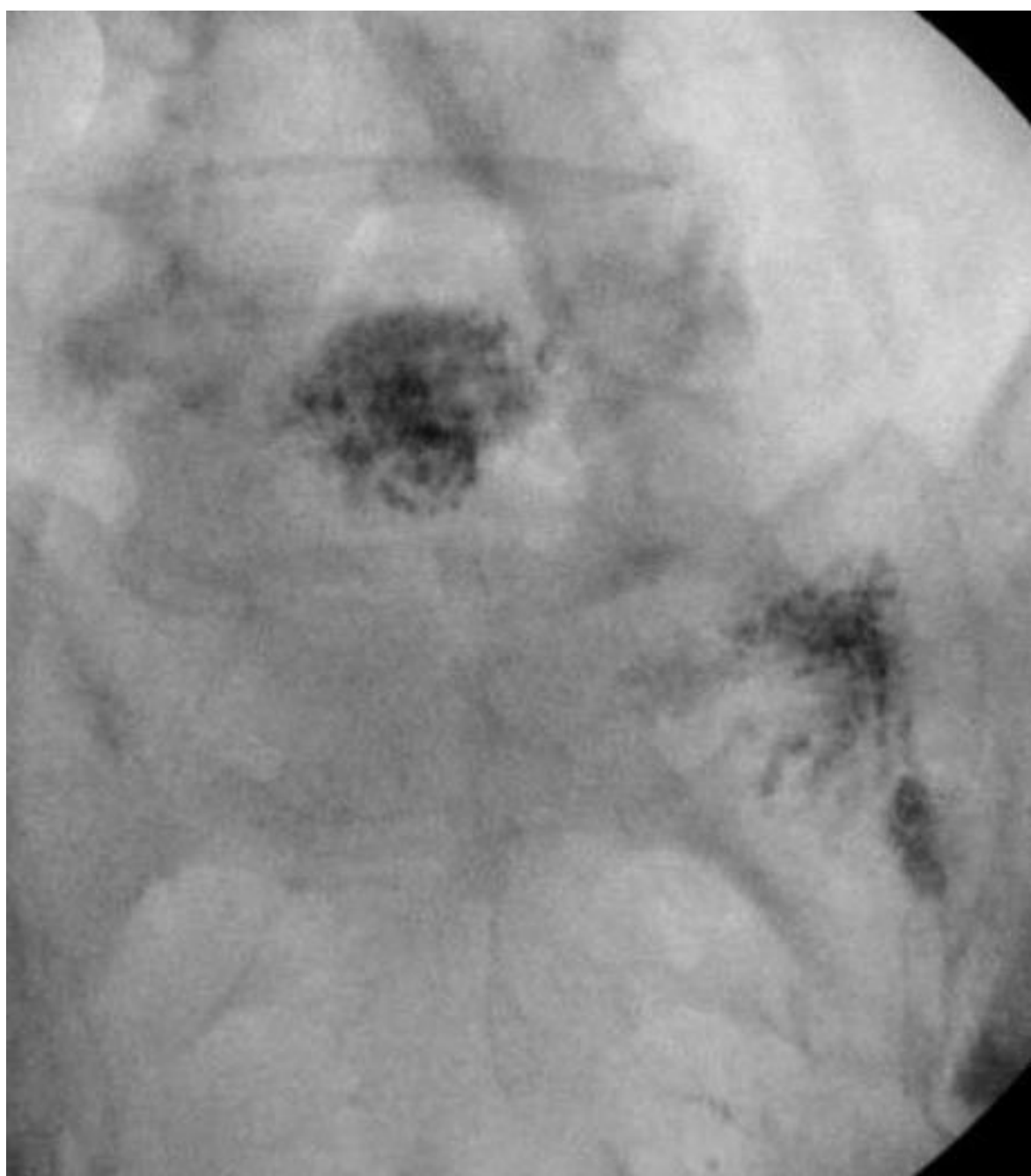
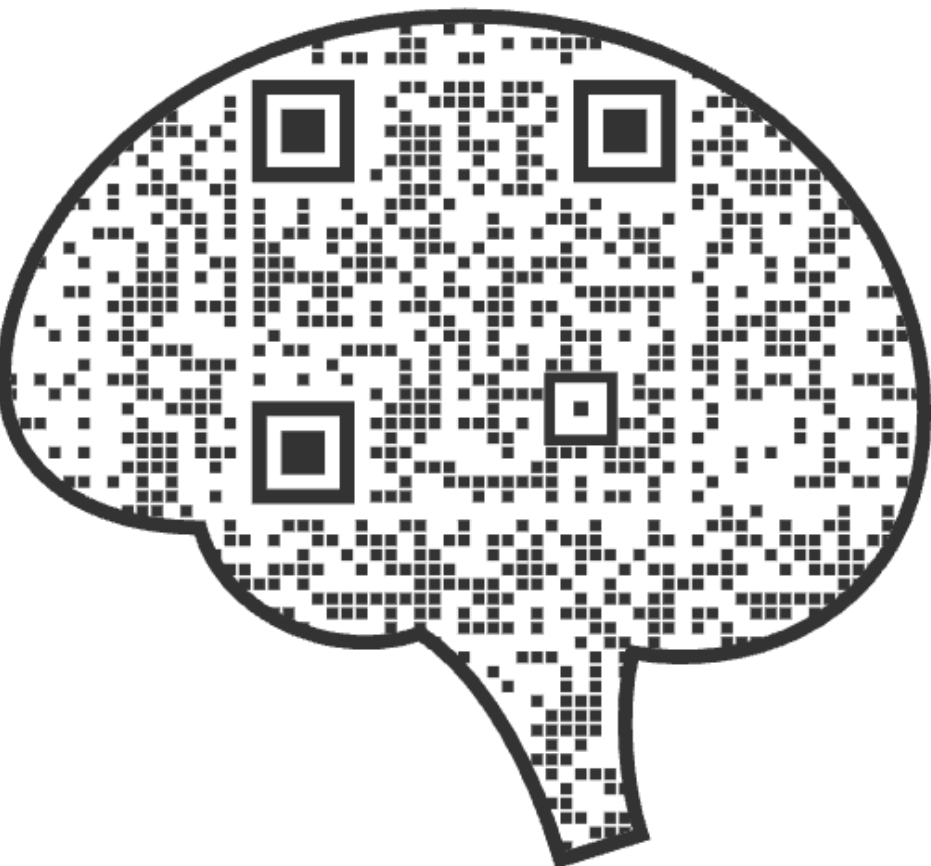


Image 5: AP fluoroscopic image post-cement injection

| Component                                                        |
|------------------------------------------------------------------|
| Final Diagnosis                                                  |
| <b>A. BONE, SACRUM, BIOPSY:</b>                                  |
| - FRAGMENTS OF BONE AND RARE MARROW ELEMENTS WITH FOCAL FIBROSIS |
| - NEGATIVE FOR METASTATIC CARCINOMA                              |
| <b>B. BONE, LUMBAR 5, BIOPSY:</b>                                |
| - FRAGMENTS OF BONE AND MARROW ELEMENTS WITH FOCAL FIBROSIS      |
| - NEGATIVE FOR METASTATIC CARCINOMA                              |



Discussion/Conclusion

The presence of bone metastases during a neoplastic process creates significant burden on both healthcare systems and more importantly the patients suffering from the respective disease. Metastases to the vertebral and pelvic bones are associated with significant pain, pathological fracture and neurologic injury. A prospective cohort study by Levy et al. evaluated long-term outcomes for 100 patients with spinal metastases treated with RFA (4). They found mean worst pain scores decreased from 8.2 at baseline to 3.5 at 6 months (p < 0.0001), with significant improvements seen as early as 3 days post-procedure and sustained through 6–12 months. Further findings included significant improvement in quality of life and significant decreases in pain interference and opioid use. The retrospective cohort study by Lv et al. compared radiofrequency ablation with cementoplasty vs. cementoplasty alone, postoperatively pain improvements were similar between both groups in the short-term follow up periods (day 3 and 1 month) (5). However, the RFA with cementoplasty group had significantly better long term pain improvement at 6 months (p<0.05). Other beneficial findings included lower tumor reoccurrence and bone cement permeability in the combination group. While first line therapy remains external beam radiation therapy (EBRT) with adjunctive bisphosphonates, radiofrequency ablation combined with cementoplasty has emerged as an effective minimally invasive option (6).

Ablative procedures can be a realistic option for management of spinal metastases (3). This case demonstrates a post-prostate cancer patient with chronic lower back pain from benign vertebral lesions. Obtaining biopsies aided the multidisciplinary team’s ability to formulate a safe and effective treatment strategy. In this case, L5 and sacral tumor radiofrequency ablation followed by L5 kyphoplasty and sacrum vertebroplasty were conducted under MAC with successful resolution in patient’s pain.

References

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